

Listing of Claims:

1. (Currently Amended) A medical treatment instrument used for coagulating and cutting ~~the~~ a patient's body tissue, the medical treatment instrument comprising:

5 a treatment portion, which is arranged at ~~the~~ a tip of the treatment instrument, and which comprises a grasp portion including a pair of grasp members, which are openable and closeable with respect to each other, for grasping the patient's
10 body tissue; ~~the treatment portion being supported capable of being opened and closed and comprising a pair of grasp portions for grasping the patient's body tissue;~~

~~a frontal~~ an operating portion which is arranged at ~~the~~ a proximal end of the treatment instrument, and which is operable to open and close ~~the operating portion operating~~ the pair of grasp members; ~~portions to be opened and closed;~~

15 a heat generating portion provided at ~~least at one of~~ the grasp portions, the heat generating portion being current-carried portion, and which generates heat in accordance with current
supplied thereto to coagulate the patient's body tissue grasped between the grasp ~~portions~~ members; and

20 a cutting portion disposed at the grasp ~~portions~~ portion to cut the patient's body tissue.

2. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein the cutting portion is ~~disposed~~ provided at each of the grasp members, at the rear a proximal side of the heat generating portion, ~~in the each grasp~~ portion, and ~~constitutes a pair of~~ comprises metal scissors for cutting the patient's body tissue.

3. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein each of the grasp ~~portions have~~ members comprises a contact portion ~~coming which is adapted to~~ come into contact with the patient's body tissue, ~~the contact~~ portion being and which is formed of a material with high thermal conductivity;

wherein the heat generating portion ~~is~~ comprises a heating element arranged inside each of the grasp ~~portion,~~ members, and the heating element ~~being of each grasp member is~~ fixed to the contact portion of the grasp member; and

wherein a slip-off preventing portion for preventing ~~slip-off of the patient's body tissue~~ from slipping off is formed at the contact portion of each of the grasp members.

4. (Withdrawn - Currently Amended) The treatment instrument according to claim 3, wherein the slip-off preventing treatment

portion ~~is formed by~~ comprises ridges on ~~the~~ a surface of the contact portion.

5. (Withdrawn) The treatment instrument according to claim 3, wherein the contact portion is formed by the heat generating portion.

6. (Withdrawn - Currently Amended) The treatment instrument according to claim 3, wherein the contact portion ~~has~~ comprises a cover portion for preventing adhesion of the patient's body tissue ~~on its~~ to a surface of the cover.

7. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein the treatment instrument ~~is formed by~~ comprises a surgical operation instrument ~~used~~ adapted for use in an endoscopy operation;

5 wherein the surgical operation instrument ~~has~~ comprises an insert portion to be inserted into the patient's body;

wherein the treatment portion is disposed at ~~the~~ a distal end of the insert portion; and

wherein the operating portion is disposed at the proximal
10 end of the insert portion.

8. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein each of the grasp portions ~~have a curve portion~~ members comprises a curved portion that is curved substantially in ~~a substantial~~ an arc shape.

9. (Withdrawn) The treatment instrument according to claim 1, wherein the heat generating portion is connected to temperature control means for controlling a heating temperature.

10. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein ~~the treatment portion has~~ the heat generating portion is provided at only one of the pair of grasp portions members.

11. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein ~~the treatment portion has the heat generating portions~~ portion comprises heat generating members provided at both of the pair of grasp portions members.

12. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein part of the cutting portion is disposed at ~~the~~ each of the grasp portion members, and ~~is comprised of~~ the cutting portion comprises a dissection

treatment heat generating portion for heating and cutting the patient's body tissue.

13. (Withdrawn - Currently Amended) The treatment instrument according to claim 12, wherein the grasp ~~portions have~~ portion comprises a coagulation treatment heat generating portion with ~~its a~~ large area for ~~contact with~~ contacting the patient's
5 body tissue and a dissection treatment heat generating portion with a small area for ~~contact with~~ contacting the patient's body tissue.

14. (Withdrawn - Currently Amended) The treatment instrument according to claim 13, wherein the coagulation treatment heat generating portion and the dissection treatment heat generating portion are connected to a power supply unit
5 comprising an output circuit for supplying power independently to the coagulation treatment heat generating portion and the dissection treatment heat generating portion.

15. (Withdrawn - Currently Amended) The treatment instrument according to claim 12, wherein the cutting portion comprises dissection treatment heat generating portion moving means for moving the dissection treatment heat generating portion

5 in a direction identical to the opening/closing direction of the grasp ~~portions~~ members; and

wherein the ~~frontal~~ operating portion ~~has~~ comprises operating means for operating the dissection treatment heat generating portion moving means.

16. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein the cutting portion is slidably supported along the grasp ~~portions~~ members, and the treatment instrument ~~has~~ comprises operating means for sliding the cutting portion to ~~the~~ a vicinity of a location coagulated ~~portion~~ by the heat generating portion.

17. (Withdrawn - Currently Amended) The treatment instrument according to claim 16, wherein the cutting portion ~~is~~ comprises a shear blade.

18. (Withdrawn - Currently Amended) The treatment instrument according to claim 17, wherein the shear blade ~~is~~ comprises a scissors-shaped shear blade consisting of upper and lower sections ~~in set~~.

19. (Withdrawn - Currently Amended) The treatment instrument according to claim 16, wherein the cutting portion ~~is formed by~~ comprises a heating element wire for dissection.

20. (Withdrawn - Currently Amended) The treatment instrument according to claim 1, wherein ~~the treatment portion has each of the grasp members comprises~~ an interfacing surface; ~~at the each grasp portion, the interfacing surface has~~

5 wherein the heat generating portion and the cutting portion are disposed ~~thereon~~ on the interfacing surfaces of the grasp members; and

wherein the cutting portion is slidably supported along the grasp ~~portions~~ members.

21. (Withdrawn) A medical treatment instrument used for coagulating and cutting the patient's body tissue, the medical treatment instrument comprising:

5 a treatment portion disposed at the distal end of the treatment instrument, the treatment portion being supported capable of being opened and closed, comprising a pair of grasp portions for grasping the patient's body tissue;

10 a frontal operating portion disposed at the proximal end of the treatment instrument, the operating portion operating the pair of grasp portion to be opened and closed;

a heat generating portion provided at least one of the grasp portions, the heat generating portion being current-carried to coagulate a patient's body tissue grasped between the grasp portions; and

15 a cutting portion disposed at the each grasp portion to cut the patient's body tissue,

wherein the cutting portion is protruded on one side of the grasp portions in the treatment portion toward the other side of the grasp portions, and comprises a heat treatment protrusion
20 portion for thermally treating the patient's body tissue and a receiving portion formed at the other side of the grasp portions and receiving the protrusion portion.

22. (Withdrawn) A medical treatment instrument used for coagulating and cutting the patient's body tissue, the medical treatment instrument comprising:

5 a treatment portion disposed at the distal end of the treatment instrument, the treatment portion being supported capable of being opened and closed and comprising a pair of grasp portions for grasping the patient's body tissue;

a frontal operating portion arranged at the proximal end of the treatment instrument, the operating portion operating the
10 pair of grasp portions to be opened and closed; and

a heat generating portion provided at least at one of the grasp portions, the heat generating portion being current-carried to coagulate the patient's body tissue grasped between the grasp portions,

15 wherein the grasp portions each have an insert portion for inserting cutting means for cutting the patient's body tissue.

23. (Withdrawn) A medical treatment instrument used for coagulating and cutting the patient's body tissue, the medical treatment instrument comprising:

5 a treatment portion arranged at the distal end of the treatment instrument, the treatment portion being supported capable of being opened and closed and comprising a pair of grasp portions for grasping the patient's body tissue;

10 a frontal operating portion disposed at the proximal end of the treatment instrument, the operating portion operating the pair of grasp portions to be opened and closed; and

a heat generating portion provided at least at one of the grasp portions, the heat generating portion being current-carried to coagulate the patient's body tissue grasped between the grasp portions,

15 wherein the heat generating portion is heater means consisting of an insulation material.

24. (Withdrawn) The treatment instrument according to claim 23, wherein the heater means is a ceramic heater having a heat transmitting portion made of ceramic and a heating element provided in this heat transmitting portion.

25. (Withdrawn) The treatment instrument according to claim 23, wherein the heater means is reinforced by a reinforce member consisting of a metal.

26. (Withdrawn) The treatment instrument according to claim 23, wherein the heater means has a cover portion for preventing adhesion of the patient's body tissue provided on its surface.

27. (Withdrawn) The treatment instrument according to claim 24, wherein the each grasp portion is formed by jaws consisting of stainless steel;

the jaws have an intermediate connection member provided
5 between the ceramic heaters and jaws; and

the intermediate connection member has first connecting means to be connected to the ceramic heater and second connecting means to be connected to the jaws.

28. (Withdrawn) A power supply unit connected to a medical treatment instrument used for coagulating and cutting the patient's body tissue,

wherein the treatment instrument comprises a treatment
5 portion arranged at the distal end thereof, the treatment portion being supported capable of being opened and closed and comprising a pair of grasp portions for grasping the patient's body tissue; a frontal operating portion arranged at the proximal end of the treatment instrument, the operating portion operating the pair of
10 grasp portions to be opened and closed; and a heat generating heater portion provided at least at one of the grasp portions, the heater portion being current-carried to coagulate and cut the patient's body tissue grasped between the grasp portions, the power supply unit comprising:

15 resistance value measuring means for measuring a resistance value of the heater portion; and

control means for controlling power supply to the heater portion according to an initial resistance value of the heater portion.

29. (Withdrawn) The power supply unit according to claim 28, wherein the power supply unit has a measurement switch for measuring the initial resistance value; and means for, when the measurement switch is pressed, setting the resistance value

5 of the heater portion measured by the resistance value measuring means as an initial resistance value.

30. (Withdrawn) The power supply unit according to claim 28, wherein the power supply unit has means for automatically measuring the initial resistance value when a treatment instrument incorporating the heater portion is connected.

31. (Withdrawn) The power supply unit according to claim 28, wherein the power supply unit comprises resistance value measuring means for measuring a resistance value of the heater portion; temperature measuring means for measuring a
5 temperature of the heater portion from the resistance value of the heater portion; and means for correcting the temperature by using the initial resistance value of the heater portion.

32. (Withdrawn) The power supply unit according to claim 28, wherein the power supply unit comprises control means for, if the initial resistance value of the heater portion is not measured, controlling operation so as not to output.

33. (Withdrawn) A coagulating treatment instrument used for coagulating the patient's body tissue, the coagulating treatment instrument comprising:

5 a treatment portion arranged at the distal end of the treatment instrument, the treatment portion being supported capable of being opened and closed and comprising a pair of grasp portions for grasping the patient's body tissue;

10 a frontal operating portion arranged at the proximal end of the treatment instrument, the operating portion operating the pair of grasp portions to be opened and closed;

a heater portion provided at least at one of the grasp portions, the heater portion being current-carried and heated to coagulate the patient's body tissue grasped between the grasp portions; and

15 an adhesion preventing treatment portion for covering the periphery of the heater portion, thereby to prevent adhesion of the patient's body tissue, the adhesion preventing treatment portion being detachably mounted to the grasp portions.

34. (Withdrawn) The treatment instrument according to claim 33, wherein the adhesion preventing treatment portion is provided on the outer surface of a cover detachable from the heater portion.

35. (Withdrawn) The treatment instrument according to claim 33, wherein the heater portion is detachably mounted on the grasp portions; and

the adhesion preventing treatment portion is provided on the outer surface of the heater portion.

36. (Withdrawn) The treatment instrument according to claim 35, wherein the treatment instrument has a heater unit detachably connected thereto, the heater portion is contained in the heater unit, and the heater unit has a electrically conducting member for supplying power to the heater portion.

37. (Withdrawn) The treatment instrument according to claim 33, wherein the adhesion preventing treatment portion is a cover detachable from the heater portion.

38. (Withdrawn) A coagulating treatment instrument used for coagulating the patient's body tissue, the coagulating treatment instrument comprising:

5 a treatment portion arranged at the distal end of the treatment instrument, the treatment portion being supported capable of being opened and closed and comprising a pair of grasp portions for grasping the patient's body tissue;

a frontal operating portion arranged at the proximal end of the treatment instrument, the operating portion operating the pair of grasp portions to be opened and closed; and

a heater portion provided at least at one of the grasp portions, the heater portion being current-carried to coagulate the patient's body tissue grasped between the grasp portions,

wherein the treatment instrument has a coagulation surface for coagulating the patient's body tissue provided at least at the heater portion or either one of the grasp portions; and the coagulation surface comprises a distal end abutting against the counterpart member of the grasp portions each other immediately after closing of the grasp portions; and a proximal end having a gap provided between the proximal end and the counterpart member of the grasp portion.

39. (Withdrawn) The treatment instrument according to claim 38, wherein the grasp portions can be elastically deformed by a closing force applied to the operating portion, and the heater portion consists of a rigid element.

40. (Withdrawn) The treatment instrument according to claim 38, wherein the operating portion comprises a stopper member actuated to stop closing operation of the grasp portions

at a predetermined closed position during close movement of the grasp portions.

41. (Withdrawn) The treatment instrument according to claim 40, wherein the closed position is determined at a position where the grasp portions are elastically deformed, and the proximal end of the coagulation surface substantially abuts.

42. (Withdrawn) A coagulating treatment instrument used for coagulating the patient's body tissue, the coagulating treatment instrument comprising:

5 a treatment portion arranged at the distal end of the treatment instrument, the treatment portion being supported capable of being opened and closed and comprising a pair of grasp portions for grasping the patient's body tissue;

10 a frontal operating portion arranged at the proximal end of the treatment instrument, the operating portion operating the pair of grasp portions to be opened and closed;

a heater portion provided at least one of the grasp portions, the heater portion being current-carried;

15 bipolar electrically conducting members connected to the heater portion, these bipolar electrically conducting members being insulated from each other and arranged at a main body of the treatment instrument; and

exposure preventing means for preventing the electrically conducting member from being exposed to the outside of the main body of the treatment instrument.

43. (Withdrawn) The treatment instrument according to claim 42, wherein the electrically conducting member is a lead wire.

44. (Withdrawn) The treatment instrument according to claim 42, wherein the treatment instrument main body comprises a housing groove of the electrically conducting member, and the exposure preventing means houses the electrically conducting member in the housing groove.

45. (Withdrawn) The treatment instrument according to claim 42, wherein the treatment instrument main body comprises a housing groove of the electrically conducting member, and the exposure preventing means is a cover member for covering the
5 housing groove while the electrically conducting member is housed in the housing groove.

46. (Withdrawn) The treatment instrument according to claim 42, wherein the treatment instrument main body is comprised

of a metal, and the electrically conducting member is composed of the treatment instrument main body at least at one electrode.

47. (Withdrawn) The treatment instrument according to claim 46, wherein at least a part of the treatment instrument main body is covered for insulation.

48. (Withdrawn) In a coagulating/cutting system comprising a medical instrument used to coagulate and incise a living tissue and a control element for controlling the operation of the instrument,

5 the instrument including

 a first engaging portion having a first engaging surface constituting an engaging surface for holding the living tissue,

 a second engaging portion having a second engaging surface constituting an engaging surface capable of holding the living
10 tissue in conjunction with the first engaging surface,

 a holding drive element capable of moving the first and second engaging portions toward and away from each other to hold the living tissue, and

 a heating unit adapted to heat the first engaging portion
15 when energized,

 the control element including

a current supply element for supplying current to the heating unit, and

20 a setting element capable of adjusting the current supply element to a temperature at which the living tissue can be incised as the heating unit is heated when the living tissue is held between the first and second engaging surfaces by means of the holding drive element.

49. (Currently Amended) ~~in a~~ A coagulating/cutting system comprising:

a medical instrument used to coagulate and incise a living tissue; and

5 a control element for controlling ~~the~~ operation of the medical instrument,

wherein the medical instrument ~~including~~ comprises:

10 a first engaging portion having a first engaging surface; ~~constituting an engaging surface for holding the living tissue,~~

a second engaging portion having a second engaging surface ~~constituting an engaging surface capable of holding the living tissue in conjunction~~ which is adapted to cooperate with the first engaging surface to hold the living tissue; [[,]]

15 a holding drive element ~~capable of moving~~ which is operable to move the first and second engaging portions toward and away from each other to hold the living tissue; [[,]] and

 a heating unit ~~adapted to heat~~ which heats the first engaging portion when energized; [[,]] and

20 wherein the control element ~~including~~ comprises:

 a current supply element for supplying current to the heating unit; [[,]]

 a first setting element ~~capable of for~~ adjusting the current supply element to set a temperature of the heating unit to a temperature at which the living tissue ~~can be is~~ coagulated ~~as the heating unit is heated~~ when the living tissue is held between the first and second engaging surfaces; ~~by means of the holding drive element,~~ and

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 a second setting element ~~capable of for~~ adjusting the current supply element to set a temperature of the heating unit to a temperature at which the living tissue ~~can be is~~ incised ~~as the heating unit is heated~~ when the living tissue is held between the first and second engaging surfaces. ~~by means of the holding drive element.~~

30

50. (Currently Amended) A coagulating/cutting system according to claim 49, wherein said control element further ~~includes~~ comprises a set state changing element capable of

changing ~~at least one of set states~~ a set state of the current
5 supply element set by ~~means of at least one of~~ the first and
second setting ~~portions~~ elements.

51. (Currently Amended) A coagulating/cutting system
according to claim 49, wherein said control element includes a
first switch for driving the current supply element set by ~~means~~
~~of~~ the first setting element and a second switch for driving the
5 current supply element set by ~~means of~~ the second setting
element.

52. (Currently Amended) A coagulating/cutting instrument
used to coagulate and incise a living tissue, comprising:
a first engaging portion having a first engaging surface
~~constituting comprising~~ a protrusion; ~~holding the living tissue;~~
5 a second engaging portion having a second engaging surface
~~constituting an engaging surface capable of holding the living~~
~~tissue in conjunction~~ which is adapted to cooperate with the
first engaging surface to hold the living tissue;

10 a holding drive element ~~capable of moving~~ which is operable
to move the first and second engaging portions to hold the living
tissue, and

a heating unit ~~adapted to heat~~ which heats the first
engaging portion when energized.

53. (Currently Amended) A coagulating/cutting instrument according to claim 52, wherein said ~~first engaging surface is~~ protrusion has an elongate flat surface opposed to the second engaging surface.

54. (Currently Amended) A coagulating/cutting instrument according to claim 52, wherein said first engaging surface ~~is~~ has an elongate curved surface ~~profiled in the~~ curved in a shape of a substantially circular arc.

55. (Original) A coagulating/cutting instrument according to claim 52, wherein said second engaging portion includes a receiving member formed of a resin.

56. (Currently Amended) A coagulating/cutting instrument according to claim 55, wherein said resin ~~is~~ comprises a flexible material.

57. (Currently Amended) A coagulating/cutting instrument according to claim ~~55~~ 52, wherein ~~said second engaging portion~~ includes a receiving member formed of ~~the material of said~~ receiving member is rubber.

58. (Currently Amended) A coagulating/cutting instrument according to claim ~~55~~ 52, wherein said second engaging portion includes a receiving member formed of the material of said receiving member is gel.

59. (Currently Amended) A coagulating/cutting instrument according to claim ~~55~~ 52, wherein said second engaging portion includes a receiving member formed of the material of said receiving member is fluoroplastic.

60. (Currently Amended) A coagulating/cutting instrument according to claim 55, wherein said receiving member has a groove ~~on~~ at a portion thereof in contact with the first engaging surface.

61. (Currently Amended) A surgical instrument, comprising:
a distal end portion including a pair of holding portions for holding a living tissue, each of said holding portion portions having a contact surface that is adapted to be brought
5 into contact with said living tissue; and

a manual operating portion for opening ~~or~~ and closing said holding portions;

wherein ~~at least~~ one of said holding portions ~~has~~ comprises a heat generating portion ~~formed in said contact portion with the~~

10 ~~living tissue which generates heat that is conducted to the~~
~~contact surface~~, and the contact surface of the holding portion
~~having the heat generating portion with the living tissue is~~
~~smaller in the~~ has a contact area with the living tissue ~~than~~
~~that is smaller than a contact area with the living tissue of the~~
15 contact surface of the ~~other~~ holding portion ~~with the living~~
~~tissue that does not include the heat generating portion.~~

62. (Currently Amended) The surgical instrument according to claim 61, wherein the contact surface of ~~said the holding portion having the~~ heat generating portion ~~with the living tissue~~ is ~~formed~~ arcuate in ~~its~~ cross section.

63. (Currently Amended) The surgical instrument according to claim 61, wherein the contact surface of the ~~other~~ holding portion that does not include the heat generating portion, which is arranged to face ~~said the contact surface of the holding~~
5 portion having the heat generating portion, ~~with the living~~
~~tissue~~ is formed of a heat insulating material.

64. (Currently Amended) The surgical instrument according to claim 61, wherein said holding ~~portion is~~ portions are curved from ~~the a~~ distal end toward ~~the a~~ proximal end thereof.

65. (Currently Amended) The surgical instrument according to claim 61, wherein ~~a slip preventing portion is formed in the~~ contact surface of the ~~other~~ holding portion that does not include the heat generating portion, which is arranged to face ~~said the contact surface of the holding portion having the heat~~ generating portion, ~~with the living tissue~~ comprises a slip preventing portion.

66. (Currently Amended) The surgical instrument according to claim 61, wherein a coating for preventing ~~the~~ sticking of ~~the~~ heated living tissue is applied to ~~the~~ an outer surface of said holding portion having the heat generating portion.

67. (Currently Amended) The surgical instrument according to claim 61, wherein the contact surface of the ~~other~~ holding portion that does not include the heat generating portion, which is arranged to face ~~said the contact surface of the holding~~ portion having the heat generating portion, ~~with the living tissue is formed of a second s~~ comprises a second heat generating portion that is rectangular in ~~its~~ cross section.

68. (Currently Amended) The surgical instrument according to claim 61, wherein the ~~other~~ holding portion that does not include the heat generating portion, which is arranged to face

~~said the contact surface of the holding portion having the~~ heat
5 ~~generating portion, has~~ comprises a chamfered portion in which
~~the both edge portions of the contact surface with the living~~
~~tissue are cut to have~~ form an obtuse angle.

69. (Currently Amended) The surgical instrument according
to claim 61, wherein the contact surface of ~~other the~~ holding
portion ~~that does not include the heat generating portion~~, which
is arranged to face ~~said the contact surface of the holding~~
5 ~~portion having the~~ heat generating portion, ~~with the living~~
~~tissue is formed of~~ comprises a flexible heat insulating
material.